

## ABSTRACT OF THE DISCLOSURE

A hybrid fiber cable network includes multiple nodes, each of which receive a first multi-carrier return signal from multiple customers with the carrier signals in a first frequency band. In a fiber-hub, one or more first multi-carrier signals are converted into a second multi-carrier signal with carrier signals in a second band. Each information signal that modulates a carrier signal in one of the first signal modulates a different higher frequency carrier signal in the second signal. A multitude of second multi-carrier signals are converted into respective optical signals with different respective optical wavelengths, multiplexed together in a common optical fiber, and transmitted back to the head-end. The first frequency band is the same for all the nodes, below 200 MHz, and preferably, from 5 to 50 MHz. The second frequency band is different for different nodes, above 200 MHz, and preferably, in a portion of the range between 300 and 1200 MHz to reduce crosstalk due to stimulated Ramon scattering (SRS). Preferably, each second frequency band is no more than one octave wide, and more preferably, no more than one half an octave wide.